Chemistry

Time Remaining: 45/45 (Minutes)

Q.1 | **Test 7 CHEMICAL EQUILIBRIUM** | **CHEMISTRY NMDCAT**

The term active mass represent the concentration in:

a. Moles
b. Mole fraction
c. $mol^{-1}dm^{-3}$
d. $moledm^{-3}$

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Correct Answer:

○ A ○ B ○ C ○ D

Next

Q.2 | **Test 7 CHEMICAL EQUILIBRIUM** | **CHEMISTRY NMDCAT**

The value of K_p becomes equal to K_c when:

a. Total number of moles of reactants are greater than total number of moles of products.
b. Total number of moles of products are greater than total number of moles of reactants.
c. The difference of total moles of reactants and total moles of products is zero.
d. The difference of total moles of reactants and total moles of products is less than zero.

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Correct Answer:

A ⚪ B ⚪ C ⚪ D

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Q.3 | **Test 7 CHEMICAL EQUILIBRIUM** | **CHEMISTRY NMDCAT**

For which one of the following the value of K_c is greater than K_p?

a. $N_2 + O_2 \rightleftharpoons 2NO$
b. $PCl_3 + Cl_2 \rightleftharpoons PCl_5$
c. $2SO_3 \rightleftharpoons 2SO_2 + O_2$
d. $N_2O_4 \rightleftharpoons 2NO_2$

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Correct Answer:

○ A ● B ○ C ○ D

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Time Remaining: 44/45 (Minutes)

Q.4	Test 7 CHEMICAL EQUILIBRIUM	CHEMISTRY NMDCAT

If [Products]/[reactants ration is less than given K_c for a reaction then:

a. concentration of products is less than of reactants

b. The reaction will move in reverse direction to attain equilibrium.

c. The reaction is in equilibrium.

d. The reaction will move forward direction to attain the equilibrium.

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Correct Answer:

A ● B ● C ● D

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Time Remaining: 44/45 (Minutes)

Q.5	Test 7 CHEMICAL EQUILIBRIUM	CHEMISTRY NMDCAT

If K_c for a reaction is very small, then which statement of the following is incorrect?

a. The rate of forward reaction is very low as compared to rate of reverse reaction

b. The reaction mixture largely composed of reactants

c. The products are highly unstable as compared of reactants

d. The forward reaction is almost complete

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Correct Answer:

A ● B C D

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Time Remaining: 43/45 (Minutes)

Q.6 | **Test 7 CHEMICAL EQUILIBRIUM** | **CHEMISTRY NMDCAT**

The change in pressure or volume will affect the equilibrium state of the system when:

a. System is in solid state

b. System is in liquid state

c. Total moles of gaseous reactants either greater or lesser than the total moles of gaseous products.

d. Total moles of gaseous reactants and total moles of gaseous products are equal.

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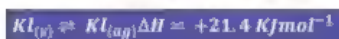
Correct Answer:

○ A ● B ○ C ○ D

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Time Remaining: 43/45 (Minutes)

Q.7	Test 7 CHEMICAL EQUILIBRIUM	CHEMISTRY NMDCAT

In the saturated solution of KI following equilibrium exist.

$$KI_{(s)} \rightleftharpoons KI_{(aq)} \Delta H = +21.4 \; KJmol^{-1}$$

Which of the following condition is favorable for crystallization.

a. Increase in pressure
b. Decrease in temperature
c. Increase in temperature
d. Increasing amount of H_2O

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Correct Answer:

○A ●B ○C ○D

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Time Remaining: 43/45 (Minutes)

Q.8	Test 7 CHEMICAL EQUILIBRIUM	CHEMISTRY NMDCAT

The relation b/w K_p and K_c is given by:

a. $K_c = k_p (p)^{-\Delta n}$
b. $K_p = k_p (RT)^{\Delta n}$
c. $K_p = k_c (RT)^n$
d. $K_p = k_c (p)^{2n}$

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Correct Answer:

A B C D

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Time Remaining: 43/45 (Minutes)

Q.9 | **Test 7 CHEMICAL EQUILIBRIUM** | **CHEMISTRY NMDCAT**

The units of equilibrium constant (Kc. For the reaction $N_2 + 3H_3 \rightleftharpoons 2NH_3 + 92.2$ Kj), will be:

a. $dm^{+6} mol^{-2}$
b. $Mole^{+2} dm^{-6}$
c. $Mole\ dm^{-3}$
d. $Mole^{-1} dm^{+3}$

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Correct Answer:

○ A ● B ● C ● D

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Q.10 | **Test 7 CHEMICAL EQUILIBRIUM** | **CHEMISTRY NMDCAT**

In which of the following reactions Kc & Kp will have the same numerical value?

a. $PCl_5 \rightleftharpoons PCl_3 + Cl_2$
b. $N_2 + 3H_2 \rightleftharpoons 2NH_3$
c. $2SO_2 + O_2 \rightleftharpoons 2SO_3$
d. $N_2 + O_2 \rightleftharpoons 2NO$

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Correct Answer:

A B C D

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Back

Time Remaining 42/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

The active mass of a solid in determining "Kc" value of a reaction is generally taken as:

a. 10
b. less than 10
c. more than unity
d. Constant

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Correct Answer:

A   B   C   D

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Back

Time Remaining 42/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

The unit of ionic product (Kw) of water is:

a. $Mole^{-1} \, dm^{-3}$
b. $Mole^{-2} \, dm^{-6}$
c. $Mole^{2} \, dm^{-3}$
d. $Mole^{+2} dm^{-6}$

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Correct Answer:

○ A ○ B ○ C ○ D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

The Pk_a of CH_3COOH is 4.74. The pH of equimolar solution of CH_3OOH and CH_3COONa:

a. 4.79

b. 4.32

c. 4.42

d. 4.74

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Correct Answer:

○A ○B ○C ○D

Next

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Test 7 CHEMICAL EQUILIBRIUM   **CHEMISTRY NMDCAT**

If NH_3 gas is dissolved in H_2O, pH of the solution:

a. May increase or decreases
b. Increases
c. not affected
d. decreases

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Correct Answer:

○ A   ● B   ○ C   ○ D

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Time Remaining 42/45 (Minutes)

Q.15   Test 7 CHEMICAL EQUILIBRIUM   CHEMISTRY NMDCAT

A solution is said to be saturated with respect to the electrolyte, if its:

a. Ionic product $< K_{sp}$
b. ionic product $> K_{sp}$
c. Ionic product $= K_{sp}$
d. (ionic product)$^2 = K_{sp}$

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Correct Answer

○ A   ○ B   ○ C   ○ D

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Time Remaining 42/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

If $CaCl_2$ is added to saturated solution of Calcium Oxalate, the solubility of calcium oxalate:

a. Decreases
b. Increases
c. Equal
d. Moderate

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Correct Answer:

A B C D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

If an acid has $pK_a = 3.4$, what will be the value of pK_b for its conjugate base?

a. 8.4   b. 10.6
c. 12.3   d. 9.6

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Correct Answer:

○ A   ○ B   ○ C   ○ D

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Time Remaining 42/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

Which one of the following relation is incorrect?

a. $pK_a + pK_b = 14$
b. $pK_w = \log 1/K_w$
c. $K_a + K_b = 14$
d. $K_w = K_a . K_b$

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Correct Answer:

A ⬤B ⬤C ⬤D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

Which one of the following condition is required for the precipitation?

a. $K_{sp} >$ Ionic product
b. Ionic product $> K_{sp}$
c. $K_{sp} =$ Ionic product
d. none of given

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Correct Answer:

○ A ○ B ○ C ○ D

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Time Remaining 41/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM   CHEMISTRY NMDCAT

Kp is always greater than Kc if

a. Number of mole of reactants are greater than products.

b. Number of mole of products are greater than reactants.

c. If both reactants and products carry same number of moles

d. All of these

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Correct Answer:

○ A   ○ B   ○ C   ○ D

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Test 7 CHEMICAL EQUILIBRIUM   **CHEMISTRY NMDCAT**

In the formation of ammonia if pressures of the system is increased then the reaction will move in which direction

a. moves in backward
b. moves in forward
c. Remains in equilibrium
d. none

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Correct Answer:

○ A   ○ B   ○ C   ○ D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

If the pH of the solution during the reaction is expected to decrease then the buffer used must possess a pH

a. Slightly lower than the expected pH
b. Slightly higher than the expected pH
c. Exactly equal to the expected pH
d. All of these

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Correct Answer:

A B C D

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Q.19

Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

In reaction A+B → AB if the concentration of A & B is tripled then the reaction will:

a. Increases 9 times
b. Increases 3times
c. Decreases to half time
d. Decreases 6 times

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Correct Answer:

○ A   ○ B   ○ C   ○ D

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Time Remaining: 41/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

When HCl is passed from a saturated solution of NaCl the solubility of NaCl is:

a. Increased

b. decreased

c. not affected

d. none

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Correct Answer:

○ A ○ B ○ C ○ D

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Time Remaining 41/45 (Minutes)

Q.19

Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

How catalysts decrease the activation energy?

a. By changing path of reaction
b. by giving energy to reactants
c. by reacting with reactants
d. none of given

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Correct Answer:

○ A ○ B ○ C ○ D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

Q.20

Which reaction will proceed in forward direction to attain equilibrium state

a. $K_c = 10$
b. $K_c = 10^4$
c. $K_c = 10^2$
d. $K_c = 10^2$

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Correct Answer:

A   B   C   D

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Time Remaining: 41/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM **CHEMISTRY NMDCAT**

Almost forward reaction is complete when value of K_c is:

a. very high
b. very small
c. neither large nor very small
d. zero

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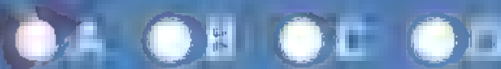
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Correct Answer:

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Time Remaining 40/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM **CHEMISTRY NMDCAT**

In which gaseous equilibrium more products will be formed by increasing pressure?

a. $N_2 + 3H_2 \rightarrow 2NH_3$
b. $PCl_5 \rightarrow PCl_3 + Cl_2$
c. $N_2 + O_2 \rightarrow 2NO$
d. $H_2 + I_2 \rightarrow 2HI$

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Correct Answer:

○ A   ○ B   ○ C   ○ D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

The solubility of those salts increases with increases in temperature which have?.

a. ΔH = -ve
b. ΔH = 0
c. ΔH = +ve
d. none of given

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Correct Answer:

○ A   ○ B   ○ C   ○ D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

Maximum yield of NH_3 can be achieved by:

a. Low pressure, low temperature and continual removal of N_2

b. High temperature, low pressure and continual addition of NH_3

c. High pressure, low temperature and continual removal of NH_3

d. High temperature, high pressure and continual removal of H_2

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Correct Answer:

○ A ○ B ○ C ○ D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

The catalyst used in NH_3 synthesis by Haber's process is the pieces of iron crystals embedded in a fused mixture of:

a. $Cr_2O_3.MgO.PbO_2$
b. $Al_2O_3.NiO.CO_2$
c. $MgO.Al_2O3.SiO_2$
d. $ZnO.Cr_2O_3.SiO_2$

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Correct Answer:

○ A ○ B ○ C ○ D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

The solubility of LiCl and Li_2CO_3 decreases with increases in temperature because their heats of solution are:

a. +ve
b. -ve
c. zero
d. very close to zero

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Correct Answer:

A   B   C   D

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Time Remaining 40/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM   **CHEMISTRY NMDCAT**

What is the relation between K_w and temperature?

a. K_w is independent of temperature

b. K_w is directly proportional to temperature

c. K_w is inversely proportional to temperature

d. K_w is inversely proportional to square root of temperature.

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Correct Answer:

○ A   ● B   ○ C   ○ D

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Test 7 CHEMICAL EQUILIBRIUM   **CHEMISTRY NMDCAT**

When 1 mole of water is dissociated into ions at 25°C, what should be the suitable value?

a. 10^3
b. 10^{-5}
c. 10^7
d. 10^{-14}

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Correct Answer.

○ A   ○ B   ○ C   ○ D

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Time Remaining 40/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

Water is a neutral compound but when an acid added to it, then in the resulting solution:

a. $[OH^-] < [H^+]$

b. $[OH] = [H^+]$

c. $[H^+] < [OH^-]$

d. $[OH^-] \approx [H^+]$

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Correct Answer:

A   B   C   D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

The acid is moderately strong when the value of Ka is:

a. Greater than 10^{-3}

b. Less than 1

c. 1 to 10^{-3}

d. None of given

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Correct Answer:

A B C D

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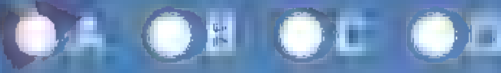
Test 7 CHEMICAL EQUILIBRIUM   CHEMISTRY NMDCAT

Which statement is incorrect?

a. Stronger the acid, weaker its conjugate base
b. Stronger the conjugate acid, weaker its acid
c. Weaker the conjugate base, stronger its acid
d. Weaker the base, stronger its conjugate acid.

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Correct Answer.

○ A ● B ○ C ○ D

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Test 7 CHEMICAL EQUILIBRIUM

CHEMISTRY NMDCAT

K_a value for H_2S is 1.0×10^{-7}? What will be its pK_a?

a. -9

b. 10^2

c. 7

d. 10^7.

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Correct Answer:

○ A ○ B ○ C ○ D

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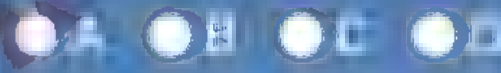Back

Test 7 CHEMICAL EQUILIBRIUM   **CHEMISTRY NMDCAT**

The solubility of a less soluble salt in water is:

a. Increased by the addition of more soluble salt
b. Decreased by the addition of less soluble salt having a common ion.
c. Decreased by the addition of less soluble salt having a common ion.
d. Decreased by the addition of more soluble salt having a common ion.

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Correct Answer:

○ A   ○ B   ○ C   ○ D

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Time Remaining 39/45 (Minutes)

Test 7 CHEMICAL EQUILIBRIUM CHEMISTRY NMDCAT

From solubility product value we can calculate:

a. Solubility of a solute
b. concentration of individual ions
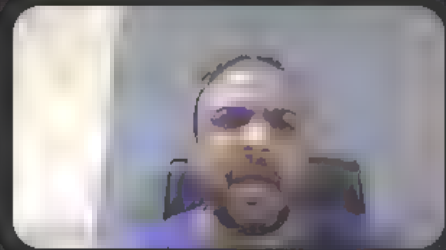c. Both 'a' and 'b'
d. None of these

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Correct Answer:

○ A ○ B ○ C ○ D

Submit Quiz

Back

Q. 1

The term active mass represent the concentration in:

a. Moles

b. mole fraction

c. $mol^{-1}\,dm^{3}$

d. $mol\;dm^{-3}$

Q. 2

The value of K_p becomes equal to K_c when:

    a. Total number of moles of reactants are greater than total number of moles of products.

    b. Total number of moles of products are greater than total number of moles of reactants.

    The difference of total moles of reactants and total moles of products is zero

    d. The difference of total moles of reactants and total moles of products is less than zero.

Q. 3

For which one of the following the value of K_c is greater than K_p ?

a. $N_2 + O_2 \rightleftharpoons 2NO$

b. $PCl_3 + Cl_2 \rightleftharpoons PCl_5$

c. $2SO_3 \rightleftharpoons 2SO_2 + O_2$

d. $N_2O_4 \rightleftharpoons 2NO_2$

سيد أختر عباس جعفرى s screen

Q. 4

if [products]/[reactants] ratio is less than given K_c for a reaction then:

    a. concentration of product is less than of reactants

    b. The reaction will move in reverse direction to attain equilibrium.

    c. The reaction is in equilibrium

    d. The reaction will move forward direction to attain the equilibrium

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Q. 5

If K_c for a reaction is very small, then which statement of the following is incorrect?

a. The rate of forward reaction is very low as compared to rate of reverse reaction

b. The reaction mixture largely composed of reactants

c. The products are highly unstable as compared of reactants

d. The forward reaction is almost complete

Q. 6

The change in pressure or volume will affect the equilibrium state of the system when:

a. System is in solid state

b. System is in liquid state

c. **Total moles of gaseous reactants either greater or lesser than the total moles of gaseous products**

d. Total moles of gaseous reactants and total moles of gaseous products are equal.

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Q. 7

In the saturated solution of KI following equilibrium exist.

$$KI_{(s)} \rightleftharpoons KI_{(aq)} \quad \Delta H = +21.4 \, KJmol^{-1}$$

Which one of the following condition is favorable for crystallization?

   a. Increase in pressure

   b. decrease in temperature

   c. Increase in temperature

   d. Increasing amount of H_2O

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Q. 8

The relation b/w K_p and K_c is given by:

a. $K_c = K_p \, (p)^{-\Delta n}$

b. $K_p = K_c \, (RT)^{\Delta n}$

c. $K_p = K_c \, (RT)^n$

d. $K_p = K_c \, (RT)^{2n}$

Q. 9

The units of equilibrium constant (Kc. for the reaction $N_2 + 3H_2 \rightleftharpoons 2NH_3 + 92.2\ KJ$), will be:

a. $dm^{+6}\ mol^{-2}$

b. $Mole^{-2}\ dm$

c. $Mole\ dm^{-3}$

d. $Mole^{-1}\ dm^{+3}$

Q. 10

In which of the following reactions Kc & Kp will have the same numerical value?

a. $PCl_5 \rightleftharpoons PCl_3 + Cl_2$

b. $N_2 + 3H_2 \rightleftharpoons 2NH_3$

c. $2SO_2 + O_2 \rightleftharpoons 2SO_3$

d. $N_2 + O_2 \rightleftharpoons 2NO$

Q. 11

The active mass of a solid in determining "K_c" value of a reaction is generally taken as:

a. 10

b. less than 10
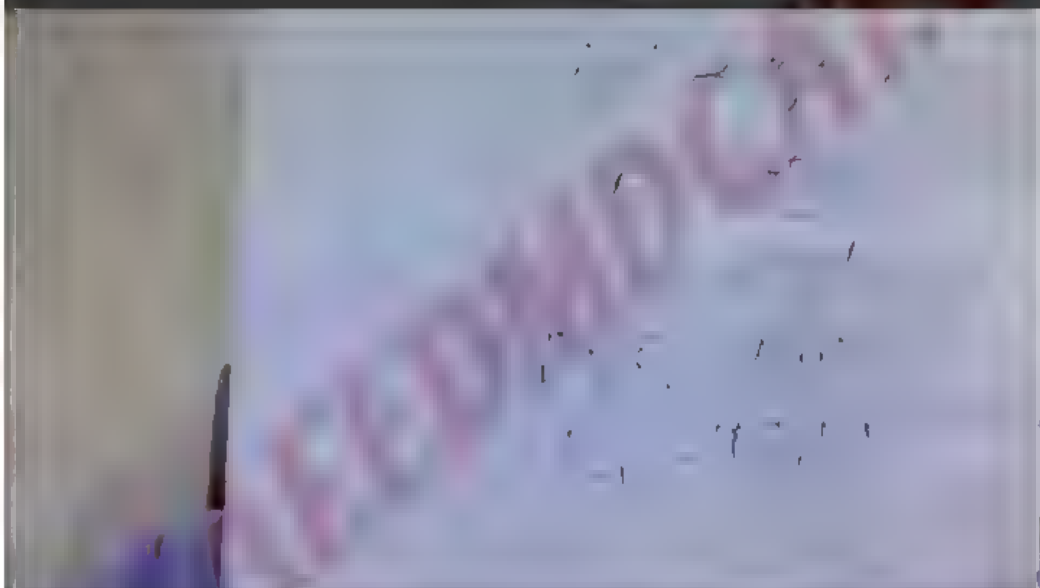
c. more than unity

d. Constant

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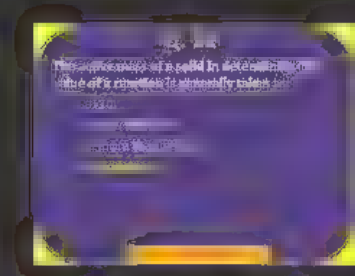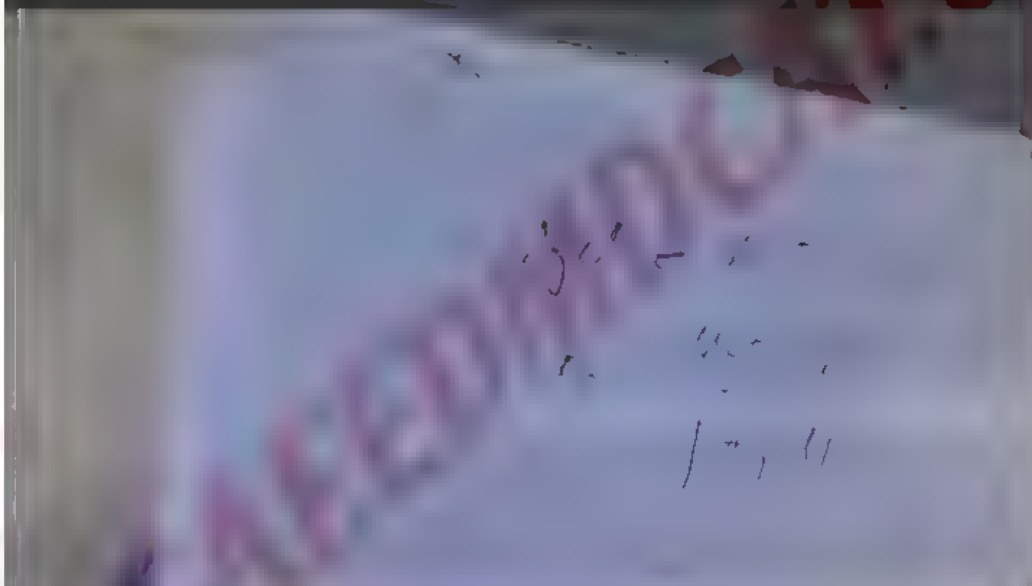
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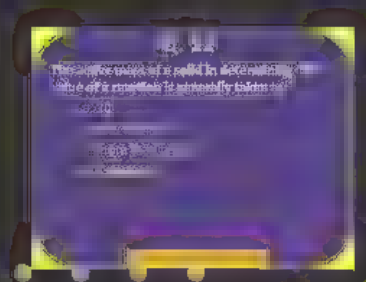
Q. 12

The unit of ionic product (Kw) of water is:

a. $Mole^{-1} \, dm^{-3}$

b. $Mole^{-2} \, dm^{-6}$

c. $Mole^{-1} \, dm^{-1}$

d. **$Mole^{-2} \, dm^{-6}$**

Q. 13

The PK_a of CH_3COOH is 4.74. The pH of equimolar solution of CH_3COOH and CH_3COONa:

a. 4.79　　　　　b. 4.32

c. 4.42　　　　　d. 4.74

Q. 14

If NH_3 gas is dissolved in H_2O , pH of the solution:

    a. May increases or decreases

    b. increases

    c. not affected

    d. decreases

Q. 15

A solution is said to be saturated with respect to the electrolyte, if its:

a. Ionic product $< K_{sp}$

b. ionic product $> K_{sp}$

Ionic product $= K_{sp}$

d. (ionic product)^2 $= K_{sp}$

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Q. 16

If $CaCl_2$ is added to saturated solution of Calcium Oxalate, the solubility of calcium oxalate:

a. **Decreases**

b. increases

c. equal

d. moderate

Q. 17

If an acid has $pK_a = 3.4$, what will be the value of pK_b for its conjugate base?

a. 8.4

b. 10.6

c. 12.3

d. 9.6

Q. 18

Which one of the following relation is incorrect?

a. $pK_a + pK_b = 14$

b. $pK_w = \log 1/K_w$

c. $K_a \cdot K_b = 14$

d. $K_w = K_a \cdot K_b$

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Q. 19

Which one of the following condition is required for the precipitation?

a. K_{sp} > Ionic product

b. Ionic product > K_{sp}

c. K_{sp} = Ionic product

d. none of given

Q. 20

Kp is always greater than Kc if

    a. Number of mole of reactants are greater than products.

b. Number of mole of products are greater than reactants.

c. If both reactants and products carry same number of moles

d. All of these

Q. 21

In the formation of ammonia if pressures of the system is increased then the reaction will move in which direction

$N_2 + 3H_2 \rightleftharpoons 2NH_3$

a. **Moves in forward**

b. moves in backward

c. Remains in equilibrium

d. none

Q. 22

If the pH of the solution during the reaction is expected to decrease then the buffer used must possess a pH

a. Slightly lower than the expected pH

b. Slightly higher than the expected pH

c. Exactly equal to the expected pH

d. All of these

Q. 23

In reaction A+B →AB if the concentration of A & B is tripled then the reaction will:

a. **increase 9 times**

b. increase 3 times

c. Decrease to half time

d. decrease 6 times

Q. 24

When HCl is passed from a saturated solution of NaCl the solubility of NaCl is:

  a. Increased

  b. decreased

  c. not affected

  d. none

Q. 25

How catalysts decrease the activation energy?

a. By changing path of reaction

b. by giving energy to reactants

c. by reacting with reactants

d. none of given

Q. 26

Which reaction will proceed in forward direction to attain equilibrium state:

a. $K_c = 10$
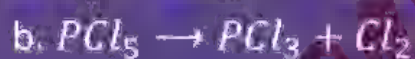
b. $K_c = 10^{-4}$

c. $K_c = 10^2$

d. $K_c = 10^{-2}$

Q. 27

Almost forward reaction is complete when value of K_c is:

a. Very high

b. very small

c. neither large nor very small

d. zero

Q. 28

In which gaseous equilibrium more products will be formed by increasing pressure?

a. $N_2 + 3H_2 \longrightarrow 2NH_3$

b. $PCl_5 \longrightarrow PCl_3 + Cl_2$

c. $N_2 + O_2 \longrightarrow 2NO$

d. $H_2 + I_2 \longrightarrow 2HI$

Q. 29

The solubility of those salts increases with increase in temperature which have?

a. $\Delta H = -ve$

b. $\Delta H = 0$

c. $\Delta H = +ve$

d. none of given

Q. 30

Maximum yield of NH_3 can be achieved by:

a. Low pressure, low temperature and continual removal of N_2

b. High temperature, low pressure and continual addition of NH_3

High pressure, low temperature and continual removal of NH_3

d. High temperature, high pressure and continual removal of H_2

Q. 31

The catalyst used in NH_3 synthesis by Haber's process is the pieces of iron crystals embedded in a fused mixture of:

   a. Cr_2O_3. MgO. PbO_2

   b. Al_2O_3. NiO. CO_2

   c. MgO. Al_2O_3. SiO_2

   d. ZnO. Cr_2O_3. SiO_2

Q. 32

The solubility of LiCl and Li_2CO_3 decreases with increases in temperature because their heats of solution are:

    a. + ve

    b. – ve

    c. zero

    d. very close to zero

Q. 33

What is the relation between Kw and temperature?

a. Kw is independent of temperature

b. **Kw is directly proportional to temperature**

c. Kw is inversely proportional to temperature

d. Kw is inversely proportional to square root of temperature.

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Q. 34

When 1 mole of water is dissociated into ions at 25°C, what should be the suitable value?

a. 10^{-3}

b. 10^{-5}

c. 10^{-7}

d. 10^{-14}

Q. 35

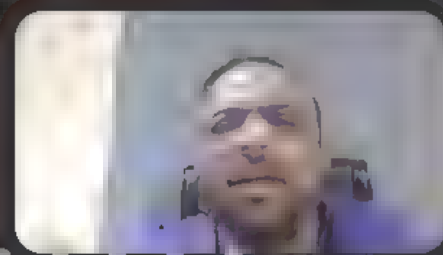Water is a neutral compound but when an acid added to it, then in the resulting solution:

a. $[OH^-] < [H^+]$

b. $[OH^-] = [H^+]$

c. $[H^+] < [OH^-]$

d. $[OH^-] \approx [H^+]$

Q. 36

The acid is moderately strong when the value of Ka is:

    a. Greater than 10^{-3}

    b. less than 1

    c. 1 to 10^{-3}

    d. none of given

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Q. 37

Which statement is incorrect?

a. Stronger the acid, weaker its conjugate base

b. Stronger the conjugate acid, weaker its acid

c. Weaker the conjugate base, stronger its acid

d. Weaker the base, stronger its conjugate acid.

Q. 38

K_a value for H_2S is 1.0×10^{-7}? What will be its pK_a?

a. -9

b. 10^{-2}

c. 7

d. 10^{-7}

Q. 39

The solubility of a less soluble salt in water is:

   a. Increased by the addition of more soluble salt

   b. Decreased by the addition of less soluble salt having a common ion.

   c. Decreased by the addition of less soluble salt having a common ion.

   d. Decreased by the addition of more soluble salt having a common ion.

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Q. 40

From solubility product value we can calculate:

a. Solubility of a solute
b. concentration of individual ions
c. **Both 'a' and 'b'**
d. None of these

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